

Trend Study 9-9-00

Study site name: Little Hole .

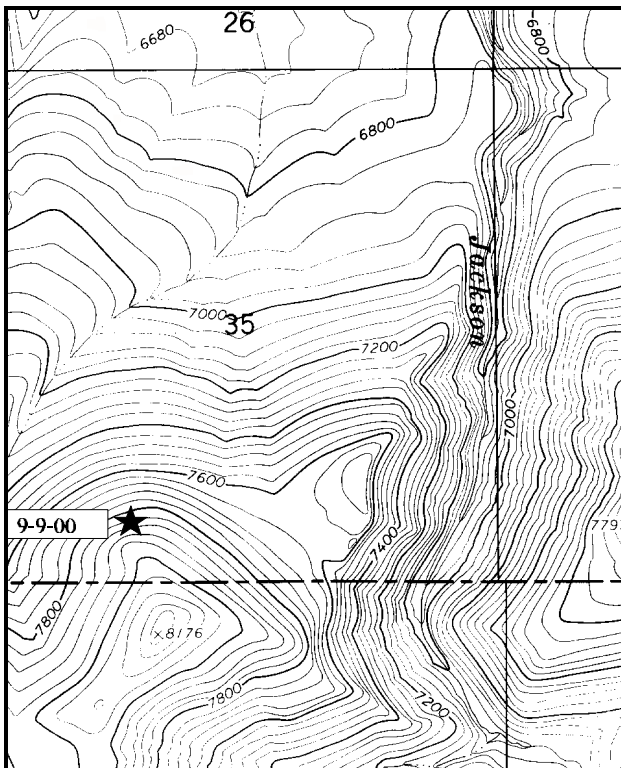
Range type: Mixed Mountain Brush .

Compass bearing: frequency baseline 345°M.

First frame placement on frequency belts 5 feet. Frequency belt placement; line 1 (11 & 95ft), line 2 (34ft), line 3 (59ft), line 4 (71ft).

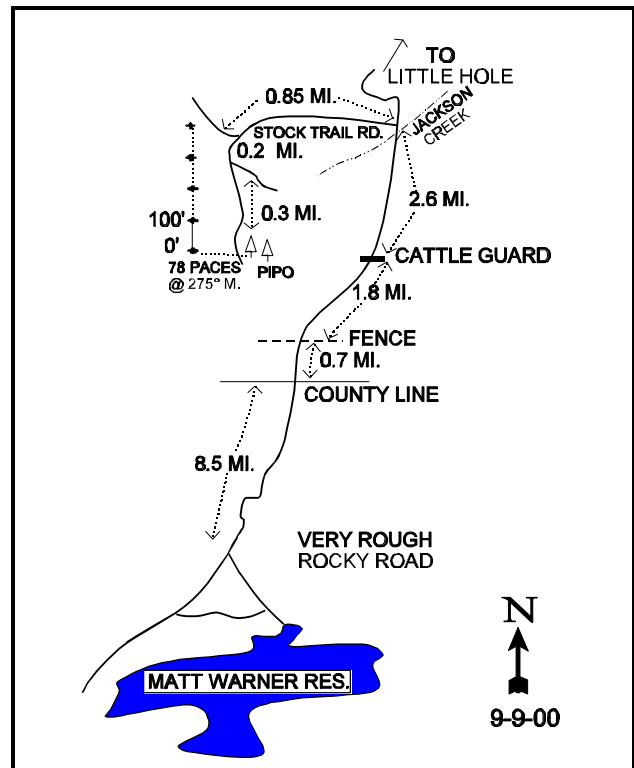
LOCATION DESCRIPTION

From the intersection of Highway U.S. 191 and the Diamond Mountain Road, take the Diamond Mountain Road to the north to a fork with a sign indicating Browns Park Road 10 miles and Vernal 36 miles. Turn left (north) towards Jackson Draw and proceed down Jackson Draw towards Little Hole. Just past where you cross Jackson Creek, about 4 miles before the end of the road at the Green River, make a left turn and proceed 0.85 miles to an intersection. Bear left, drive about 0.5 miles and stop. From the 2 large ponderosa pines near the road, walk SW (275°M) for 78 paces to a large rock outcropping just below another large ponderosa. From this tree, the 0-foot baseline stake is 21 paces at 206°M. The frequency baseline is marked by 18 inch green fenceposts.



Map Name: Jackson Draw

Township 2N ,Range 23E , Section 35



Diagrammatic Sketch

UTM 4525760 N, 643991 E

## DISCUSSION

### Trend Study No. 9-9 (11-10)

The Little Hole study is on a north facing, 20% slope overlooking the Green River at Little Hole. It is considered an important winter range for deer and elk. The study samples a mixed mountain brush type with scattered pinyon-juniper, Ponderosa pine, and Douglas fir. Elevation is 7,800 feet. This area is managed by the BLM which is grazed by cattle during the summer season from June 1 to October 15. Pellet group transect data taken along the baseline in 2000 estimates light use by livestock at 9 cow days use/acre (22 cdu/ha). Cattle pats sampled appeared to be from the fall of 1999. Wildlife use was also light with an estimated 28 deer days use/acre (69 ddu/ha) and 6 elk days use/acre (15 edu/ha) in 2000.

Soils are derived from igneous parent material and have a sandy clay loam texture. Soil depth characteristically varies as the transect runs downslope. Estimated effective rooting depth is over 12 inches. Penetrometer readings used to estimate a stoniness profile index shows a lot of rock between the surface down to 12 inches. Phosphorus is low at just 6.4 ppm, which is lower than the 10 ppm thought necessary for normal plant growth and development. The soil is slightly acidic in reactivity (pH of 6.2). Erosion potential is moderate on this 20% slope, but due to a somewhat abundant understory, erosion appears to be minimal for the most part. Evidence of past soil movement can be seen by a build-up of soil on the uphill side of shrub and tree stems.

Mountain big sagebrush and antelope bitterbrush are the key browse species and together make up over 75% of the total browse cover. In 2000, cover for sagebrush and bitterbrush was estimated at 17% and 9% respectively. Density of big sagebrush has varied between readings due mostly to the increased sample size used following the 1988 reading. Currently ('00), big sagebrush is estimated at 3,320 plants/acre with about half of the population being mature plants and the other half being decadent. Percent decadency was estimated at 19% in 1995, more than doubling in 2000 to 47%. This increase in decadency has occurred in the majority of other big sagebrush sites in the region and is primarily attributed to drought. Although the level of decadency is high in 2000, it is still well below the high of 74% in the drought year of 1988. Recruitment from young plants is estimated at 160 plants/acre in 2000, which is nearly the amount of decadent plants classified as dying in the population. Use is currently ('00) light on mountain big sagebrush. Annual growth is moderately high, averaging 6 inches over the site.

The population of bitterbrush is estimated at 1,540 plants/acre in 2000 with percent decadency being relatively low at 12%. Recruitment is moderately low at 80 plants/acre, but with low decadency and 83% of the population being mature plants, this population appears to be stable. Use increased somewhat in 2000 with heavy use being estimated on 26% of the population, an increase from 1% in 1995. Vigor is good and average leader growth is low in 2000 at about 3 inches.

A small number of true mountain mahogany and serviceberry occur on the site. Mahogany are moderate to heavily hedged in 2000, with poor vigor being estimated on 21% of the population. Density is estimated at 280 plants/acre and decadency is low at 7%. Annual average leader growth on mahogany is 4 inches in 2000. Serviceberry has an estimated density of 120 plants/acre in 2000. Use is moderate to heavy, with no decadent plants and high young recruitment at 33%. The proportion of the population in poor vigor decreased from 33% in 1995 to 17% in 2000.

Other browse found on the site include: mountain low rabbitbrush, slenderbush eriogonum, broom snakeweed, Oregon grape and snowberry. Point-center quarter data in 2000 estimates 42 pinyon trees/acre, 7 juniper trees/acre, 8 ponderosa pine trees/acre, and 5 Douglas fir trees/acre.

The herbaceous understory is diverse, especially the grass component. Perennial grasses provide 36% of the total vegetative cover of the site in 2000, an increase from 24% in 1995. Ten perennial species were sampled in 2000, of which Kentucky bluegrass was by far the most abundant. Kentucky bluegrass increased from 3% average cover in 1995 to 14% in 2000. It now provides 69% of the grass cover on the site. This species has significantly increased in nested frequency since 1995. Thickspike wheatgrass is also moderately abundant on the site. Other species include: oniongrass, bluebunch wheatgrass, mutton bluegrass, Sandberg bluegrass, needle-and-thread, Letterman needlegrass and bottlebrush squirreltail. Grasses had been utilized when the site was read in July 2000. As a group, sum of nested frequency for perennial grasses slightly decreased in 2000 with drought. Individually, 6 of the 10 species sampled significantly decreased in nested frequency in 2000.

Forbs have been diverse in number, but not particularly abundant during any reading. Twenty-two perennial forb species were encountered in 1995, with only hairy goldaster contributing more than 1% cover. Due to drought, only 15 perennial species were sampled in 2000, with sum of nested frequency significantly decreasing. Annual forbs were abundant in 1995, but nearly non-existent in 2000 due to the dry conditions.

### 1982 APPARENT TREND ASSESSMENT

Overall range trend appears stable to perhaps slightly improving. An apparent increase in antelope bitterbrush is encouraging. A concurrent decline in mountain big sagebrush is less so. If the community is in a state of flux, it will be important to prevent any increase in broom snakeweed or pricklypear. Soil trend appears stable.

### 1988 TREND ASSESSMENT

Ground cover data show an increase in vegetative cover which is consistent with frequency and density data, although the percentage of rock cover doubled to almost 13%. Percent bare ground declined from 16% to 9%. Soil trend is up. Trend for mountain big sagebrush is slightly down due to an increase in percent decadency. This condition is caused by the unusually dry conditions present this year and will improve with normal precipitation patterns. Trend for antelope bitterbrush is up due to a large increase in seedling and young plants indicating an increasing population. Overall, the browse trend is considered stable. The herbaceous understory trend is up with increased quadrat frequency for both grasses and forbs.

#### TREND ASSESSMENT

soil - up (5)

browse - stable overall; down for sagebrush and up for bitterbrush (3)

herbaceous understory - up (5)

### 1995 TREND ASSESSMENT

Soil trend is up slightly due to a decrease in percent bare ground from 9% to 4%. Percent rock cover has declined and litter cover has remained fairly stable. The herbaceous understory makes up only 38% of the vegetative cover, but sum of nested frequency of vegetation and litter cover is high, indicating well dispersed protective cover. Trend for sagebrush is up due to a major decrease in decadency. It appears that most of the decadent shrubs are now normal, mature plants with good vigor. This site was read in mid-September of 1988 and decadency numbers were likely inflated due to sagebrush dropping leaves in response to the dry conditions of that year. Trend for bitterbrush is slightly up due to an increase in the number of mature plants. Reproductive potential and percent young declined since 1988, but there are still sufficient seedlings and young to maintain the population. Average height and crown has also increased significantly. Overall browse trend is slightly up. The herbaceous understory trend is stable. Three of the five most numerous perennial grass species increased significantly, but the overall sum of nested frequency for perennial grasses declined slightly. Sum of nested frequency for perennial forbs increased significantly.

### TREND ASSESSMENT

soil - slightly up (4)

browse - slightly up overall; up for mountain big sagebrush and slightly up for bitterbrush (4)

herbaceous understory - stable (3)

### 2000 TREND ASSESSMENT

Trend for soil is stable. Bare ground doubled from 4% to 8%, but this is still comparatively low. Vegetation and litter cover remain high and are well disbursed over the site. Erosion remains minimal on this moderately steep site. Trend for browse is slightly down for mountain big sagebrush and stable for bitterbrush. Trend for mountain big sagebrush is slightly down due to the large increase in percent decadency from 19% to 47%. This increase is due to drought and should improve with better precipitation in the future. Although decadency increased, the proportion of the decadent plants classified as dying is low, and recruitment is currently adequate to replace this class of plants if any die-off occurs. Bitterbrush remains in mostly good vigor, decadency is low at 12% and use is not extreme. Trend for the herbaceous understory is slightly down overall. Although Kentucky bluegrass is the most abundant grass and increased in both cover and nested frequency in 2000, six other perennial grasses significantly decreased in nested frequency. Perennial forbs, while less abundant than grasses, declined in sum of nested frequency by nearly half.

### TREND ASSESSMENT

soil - stable (3)

browse - stable overall; slightly down for mountain big sagebrush, stable for bitterbrush (3)

herbaceous understory - slightly down (2)

HERBACEOUS TRENDS --

Herd unit 09 , Study no: 9

T y p e	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
G	Agropyron dasystachyum	<sub>a</sub> 53	<sub>b</sub> 92	115	35	24	39	45	1.24	1.89
G	Agropyron spicatum	<sub>b</sub> 97	<sub>ab</sub> 70	<sub>a</sub> 41	-	36	30	18	.84	1.12
G	Bromus tectorum (a)	-	<sub>b</sub> 50	<sub>a</sub> 3	-	-	18	1	.45	.00
G	Carex spp.	2	9	7	3	2	4	3	.17	.18
G	Koeleria cristata	<sub>c</sub> 61	<sub>b</sub> 5	<sub>a</sub> -	8	26	4	-	.02	-
G	Melica bulbosa	<sub>a</sub> 27	<sub>b</sub> 98	<sub>a</sub> 43	7	10	40	16	1.87	.69
G	Poa fendleriana	<sub>a</sub> 28	<sub>b</sub> 92	<sub>a</sub> 35	-	12	31	13	1.38	.92
G	Poa pratensis	<sub>a</sub> 90	<sub>a</sub> 140	<sub>b</sub> 206	1	34	46	66	3.18	14.19
G	Poa secunda	<sub>c</sub> 150	<sub>b</sub> 75	<sub>a</sub> 27	50	59	30	11	1.00	.22
G	Sitanion hystrix	<sub>b</sub> 113	<sub>a</sub> 33	<sub>a</sub> 12	20	50	17	7	.35	.22
G	Stipa comata	<sub>c</sub> 144	<sub>b</sub> 57	<sub>a</sub> 20	56	61	28	8	1.03	.80
G	Stipa lettermani	8	8	16	6	5	4	5	.21	.39
Total for Annual Grasses		0	50	3	0	0	18	1	0.45	0.00
Total for Perennial Grasses		773	679	522	168	319	273	192	11.33	20.68
Total for Grasses		773	729	525	168	319	291	193	11.79	20.68
F	Agoseris glauca	<sub>a</sub> -	<sub>b</sub> 15	<sub>a</sub> 3	-	-	6	1	.06	.00
F	Antennaria rosea	15	8	16	2	8	4	5	.48	.86
F	Arabis spp.	3	3	-	1	1	1	-	.00	-
F	Astragalus convallarius	1	11	12	-	1	4	5	.09	.39
F	Astragalus spp.	1	-	-	-	1	-	-	-	-
F	Castilleja linariaefolia	-	1	-	-	-	1	-	.06	-
F	Calochortus nuttallii	-	3	-	-	-	2	-	.01	-
F	Chaenactis douglasii	<sub>b</sub> 13	<sub>a</sub> -	<sub>a</sub> 1	-	6	-	1	-	.00
F	Collomia linearis (a)	-	<sub>b</sub> 109	<sub>a</sub> -	-	-	43	-	.33	-
F	Comandra pallida	<sub>a</sub> -	<sub>b</sub> 29	<sub>b</sub> 25	-	-	14	12	.26	.18
F	Collinsia parviflora (a)	-	<sub>b</sub> 252	<sub>a</sub> 10	-	-	85	5	2.74	.02
F	Crepis acuminata	<sub>b</sub> 8	<sub>b</sub> 7	<sub>a</sub> -	-	5	3	-	.04	-
F	Cystopteris fragilis	4	-	-	-	2	-	-	-	-
F	Delphinium nuttallianum	-	6	-	-	-	2	-	.01	-
F	Descurainia pinnata (a)	-	2	-	-	-	1	-	.00	-
F	Erigeron eatonii	15	1	7	-	6	1	3	.00	.01
F	Eriogonum umbellatum	2	-	2	-	1	-	1	-	.00
F	Gayophytum ramosissimum (a)	-	3	-	-	-	1	-	.00	-

T y p e	Species	Nested Frequency			Quadrat Frequency				Average Cover %	
		'88	'95	'00	'82	'88	'95	'00	'95	'00
F	Gilia spp.	-	-	-	1	-	-	-	-	-
F	Heterotheca villosa	<sub>b</sub> 84	<sub>a</sub> 51	<sub>a</sub> 40	12	37	22	19	1.01	.73
F	Ipomopsis aggregata	3	6	5	-	2	4	3	.02	.06
F	Lepidium densiflorum (a)	-	<sub>b</sub> 7	<sub>a</sub> -	-	-	4	-	.02	-
F	Linum lewisii	-	3	-	-	-	1	-	.00	-
F	Lithospermum ruderales	4	1	1	-	2	1	1	.03	.00
F	Lomatium spp.	<sub>a</sub> -	<sub>b</sub> 7	<sub>a</sub> -	-	-	3	-	.02	-
F	Lupinus argenteus	<sub>a</sub> -	<sub>c</sub> 38	<sub>b</sub> 11	-	-	19	6	.69	.10
F	Microsteris gracilis (a)	-	4	2	-	-	3	1	.01	.00
F	Orobancha spp.	-	5	-	-	-	2	-	.03	-
F	Penstemon spp.	3	-	-	-	2	-	-	-	-
F	Petrorhiza pumila	<sub>b</sub> 7	<sub>a</sub> -	<sub>a</sub> -	-	4	-	-	-	-
F	Phlox hoodii	-	2	3	-	-	1	1	.00	.15
F	Polygonum douglasii (a)	-	<sub>b</sub> 19	<sub>a</sub> 8	-	-	12	4	.06	.02
F	Sphaeralcea coccinea	24	17	13	-	13	8	6	.09	.20
F	Taraxacum officinale	<sub>b</sub> 17	<sub>b</sub> 16	<sub>a</sub> -	-	9	8	-	.07	-
F	Tragopogon dubius	<sub>b</sub> 9	<sub>a</sub> -	<sub>a</sub> -	3	5	-	-	-	-
F	Trifolium gymnocarpon	<sub>a</sub> -	<sub>c</sub> 29	<sub>b</sub> 6	-	-	13	3	.06	.04
F	Zigadenus paniculatus	-	2	4	-	-	1	2	.00	.06
Total for Annual Forbs		0	396	20	0	0	149	10	3.18	0.05
Total for Perennial Forbs		213	261	149	19	105	121	69	3.09	2.82
Total for Forbs		213	657	169	19	105	270	79	6.27	2.87

Values with different subscript letters are significantly different at  $\alpha = 0.10$

#### BROWSE TRENDS --

Herd unit 09 , Study no: 9

T y p e	Species	Strip Frequency		Average Cover %	
		'95	'00	'95	'00
B	Amelanchier alnifolia	6	4	.03	.41
B	Artemisia tridentata vaseyana	91	82	15.07	16.77
B	Cercocarpus montanus	16	13	1.31	1.69
B	Chrysothamnus viscidiflorus lanceolatus	4	4	.18	.06
B	Eriogonum heracleoides	2	1	.18	-
B	Eriogonum microthecum	32	24	1.07	1.12

T y p e	Species	Strip Frequency		Average Cover %	
		'95	'00	'95	'00
B	Gutierrezia sarothrae	6	0	-	-
B	Mahonia repens	2	0	-	-
B	Pinus edulis	0	4	1.74	2.24
B	Pinus ponderosa	0	0	.38	-
B	Purshia tridentata	51	56	7.84	9.34
B	Symphoricarpos oreophilus	16	15	1.53	2.60
B	Tetradymia canescens	0	1	-	-
Total for Browse		226	204	29.36	34.25

#### CANOPY COVER --

Herd unit 09 , Study no: 9

Species	Percent Cover	
	'95	'00
Pinus edulis	-	2

#### BASIC COVER --

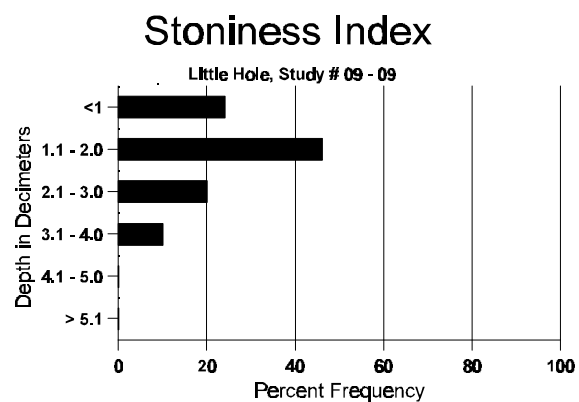
Herd unit 09 , Study no: 9

Cover Type	Nested Frequency		Average Cover %			
	'95	'00	'82	'88	'95	'00
Vegetation	357	337	8.75	12.25	52.22	56.11
Rock	112	89	6.00	12.50	8.00	5.73
Pavement	25	25	.25	.75	.20	.90
Litter	392	385	64.50	61.50	64.56	66.65
Cryptogams	91	63	5.00	4.25	1.27	1.97
Bare Ground	113	136	15.50	8.75	3.90	8.44

#### SOIL ANALYSIS DATA --

Herd Unit 09, Study # 9, Study Name: Little Hole

Effective rooting depth (inches)	Temp °F (depth)	pH	% sand	% silt	% clay	% OM	PPM P	PPM K	dS/m
12.52	59.6 (12.83)	6.2	64.4	18.0	20.6	2.6	6.4	153.6	0.5



#### PELLET GROUP FREQUENCY --

Herd unit 09 , Study no: 9

Type	Quadrat Frequency	
	'95	'00
Rabbit	4	13
Moose	1	1
Elk	4	3
Deer	15	12
Cattle	6	7

Pellet Transect	
Pellet Groups per Acre '00	Days Use per Acre (ha) '00
278	N/A
26	2 (5)
78	6 (15)
365	28 (69)
113	9 (22)



## BROWSE CHARACTERISTICS --

Herd unit 09 , Study no: 9

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Amelanchier alnifolia																		
Y	'82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	'88	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	'95	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	'00	2	-	-	-	-	-	-	-	-	-	1	1	-	40		2	
M	'82	-	1	-	-	-	-	-	-	-	1	-	-	-	33	27	22	1
	'88	-	-	-	1	-	-	-	-	-	1	-	-	-	33	26	20	1
	'95	3	2	-	-	-	-	-	-	-	2	1	2	-	100	29	38	5
	'00	1	1	1	1	-	-	-	-	-	3	1	-	-	80	35	44	4
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'82			100%			00%			00%			+50%				
		'88			00%			00%			00%			+45%				
		'95			33%			00%			33%			+ 0%				
		'00			17%			17%			17%							
Total Plants/Acre (excluding Dead & Seedlings)												'82	33	Dec:	-			
												'88	66		-			
												'95	120		-			
												'00	120		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Artemisia tridentata vaseyana																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	00	7	-	-	-	-	-	-	-	-	7	-	-	-	140		7	
Y	82	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	88	6	1	-	4	-	-	1	-	-	12	-	-	-	400		12	
	95	13	1	-	-	-	-	-	-	-	14	-	-	-	280		14	
	00	8	-	-	-	-	-	-	-	-	8	-	-	-	160		8	
M	82	24	24	-	-	-	-	-	-	-	46	2	-	-	1600	17 23	48	
	88	6	7	2	1	-	-	-	-	-	15	1	-	-	533	16 20	16	
	95	74	76	1	6	-	-	-	-	-	157	-	-	-	3140	23 34	157	
	00	72	1	-	7	-	-	-	-	-	80	-	-	-	1600	25 32	80	
D	82	-	10	1	-	-	-	-	-	-	7	2	1	1	366		11	
	88	40	37	1	1	-	-	-	-	-	75	-	-	4	2633		79	
	95	16	19	4	1	-	-	-	-	-	32	-	-	8	800		40	
	00	69	1	-	8	-	-	-	-	-	70	-	-	8	1560		78	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	600		30	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	500		25	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'82			57%			02%			+44%							
		'88			42%			03%			+15%							
		'95			45%			02%			-21%							
		'00			01%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	1999	Dec:	18%			
												'88	3566		74%			
												'95	4220		19%			
												'00	3320		47%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Cercocarpus montanus																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	3	-	-	-	-	-	-	-	-	3	-	-	100			3	
	95	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	-	1	-	-	-	-	-	-	-	1	-	-	33			1	
	95	2	-	-	-	-	-	-	-	-	2	-	-	40			2	
	00	2	-	-	1	-	-	-	-	-	3	-	-	60			3	
M	82	-	1	-	-	-	-	-	-	-	1	-	-	33	28	31	1	
	88	-	-	1	-	-	-	-	-	-	1	-	-	33	22	31	1	
	95	9	4	2	2	-	-	-	-	-	15	2	-	340	37	50	17	
	00	3	-	1	1	4	1	-	-	-	7	-	3	200	35	49	10	
D	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	00	-	-	-	-	-	1	-	-	-	1	-	-	20			1	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	20			1	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'82			100%			00%			+50%							
		'88			50%			50%			+83%							
		'95			21%			11%			-26%							
		'00			29%			21%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	33	Dec:	0%			
												'88	66		0%			
												'95	380		0%			
												'00	280		7%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Chrysothamnus viscidiflorus lanceolatus																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	95	11	-	-	-	-	-	-	-	-	11	-	-	-	220	16	19	
	00	6	-	-	-	-	-	1	-	-	7	-	-	-	140	14	10	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%			-18%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)													'82	0	Dec:	-		
													'88	0		-		
													'95	220		-		
													'00	180		-		
Eriogonum heracleoides																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	95	1	-	-	1	-	-	-	-	-	2	-	-	-	40	7	19	
	00	-	-	-	2	-	-	-	-	-	2	-	-	-	40	-	2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%			+ 0%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)													'82	0	Dec:	-		
													'88	0		-		
													'95	40		-		
													'00	40		-		

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Eriogonum microthecum																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	1	-	-	-	-	-	-	-	-	1	-	-	33			1	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	00	2	-	-	-	-	-	-	-	-	2	-	-	40			2	
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	7	-	-	1	-	-	-	-	-	7	-	1	266			8	
	95	3	-	-	-	-	-	-	-	-	3	-	-	60			3	
	00	3	-	-	2	-	-	-	-	-	5	-	-	100			5	
M	82	6	-	-	-	-	-	-	-	-	5	-	1	200	9	8	6	
	88	7	-	-	4	-	-	-	-	-	10	-	1	366	7	6	11	
	95	95	-	-	-	-	-	-	-	-	95	-	-	1900	11	16	95	
	00	30	1	-	10	-	-	8	-	-	49	-	-	980	9	11	49	
D	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	3	-	-	-	-	-	-	-	-	3	-	-	100			3	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	00	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			17%			+73%							
'88		00%			00%			09%			+63%							
'95		00%			00%			00%			-44%							
'00		02%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	200	Dec:	0%			
												'88	732		14%			
												'95	1960		0%			
												'00	1100		2%			
Gutierrezia sarothrae																		
M	82	8	-	-	-	-	-	-	-	-	8	-	-	266	9	6	8	
	88	5	-	-	-	-	-	-	-	-	5	-	-	166	7	6	5	
	95	8	-	-	-	-	-	-	-	-	8	-	-	160	10	10	8	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%			-38%							
'88		00%			00%			00%			- 4%							
'95		00%			00%			00%										
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	266	Dec:	-			
												'88	166		-			
												'95	160		-			
												'00	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Mahonia repens																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	2	-	-	-	-	-	-	-	-	2	-	-	-	40		2	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	4	5	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%										
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	0	Dec:	-			
												'88	0		-			
												'95	40		-			
												'00	0		-			
Opuntia spp.																		
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	5	-	-	1	-	-	-	-	-	5	-	1	-	200		6	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
M	82	7	-	-	-	-	-	-	-	-	7	-	-	-	233	6	9	
	88	3	-	-	-	-	-	-	-	-	1	-	2	-	100	4	6	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	4	7	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0	7	22	
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	1	-	-	-	-	-	-	-	-	1	-	-	-	33		1	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%			+30%							
'88		00%			00%			30%										
'95		00%			00%			00%										
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	233	Dec:	0%			
												'88	333		10%			
												'95	0		0%			
												'00	0		0%			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Pinus edulis																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	88	-	-	-	1	-	-	1	-	-	2	-	-	66			2	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	00	1	-	-	-	-	-	-	-	-	1	-	-	20			1	
Y	82	1	-	-	-	-	-	-	-	-	1	-	-	33			1	
	88	1	-	-	-	-	-	-	-	-	1	-	-	33			1	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	00	2	-	-	-	-	-	-	-	-	2	-	-	40			2	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	00	-	-	-	1	-	-	-	1	-	2	-	-	40	-	-	2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%			+ 0%							
'88		00%			00%			00%										
'95		00%			00%			00%										
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	33	Dec:	-			
												'88	33		-			
												'95	0		-			
												'00	80		-			
Pinus ponderosa																		
Y	82	1	-	-	-	-	-	-	-	-	1	-	-	33			1	
	88	2	-	-	2	-	-	-	-	-	4	-	-	133			4	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0			0	
M	82	1	-	-	-	-	-	-	-	-	1	-	-	33	41	69	1	
	88	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
	00	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	0	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%			+50%							
'88		00%			00%			00%										
'95		00%			00%			00%										
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	66	Dec:	-			
												'88	133		-			
												'95	0		-			
												'00	0		-			

A G E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches)		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4		Ht.	Cr.	
Purshia tridentata																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	7	-	-	1	-	-	4	-	-	12	-	-	-	400		12	
	95	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	82	2	-	-	-	-	-	-	-	-	2	-	-	-	66		2	
	88	26	5	-	5	-	-	3	-	-	38	-	1	-	1300		39	
	95	5	6	-	4	-	-	-	-	-	15	-	-	-	300		15	
	00	4	-	-	-	-	-	-	-	-	4	-	-	-	80		4	
M	82	6	4	-	-	-	-	-	-	-	10	-	-	-	333	22 32	10	
	88	4	8	3	-	-	-	-	-	-	14	-	1	-	500	17 24	15	
	95	30	37	-	5	1	-	-	-	-	73	-	-	-	1460	22 50	73	
	00	24	4	3	19	1	13	-	-	-	62	-	2	-	1280	25 49	64	
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	1	1	-	-	-	-	-	-	2	-	-	-	66		2	
	95	-	-	1	-	-	-	-	-	-	1	-	-	-	20		1	
	00	2	-	1	3	-	3	-	-	-	8	-	1	-	180		9	
X	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	40		2	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
		'82			33%			00%			+79%							
		'88			25%			07%			- 5%							
		'95			49%			01%			-13%							
		'00			06%			26%										
Total Plants/Acre (excluding Dead & Seedlings)												'82	399	Dec:	0%			
												'88	1866		4%			
												'95	1780		1%			
												'00	1540		12%			



A G R E	Y R	Form Class (No. of Plants)									Vigor Class				Plants Per Acre	Average (inches) Ht. Cr.		Total
		1	2	3	4	5	6	7	8	9	1	2	3	4				
Symphoricarpos oreophilus																		
S	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	1	-	-	-	-	-	-	-	-	1	-	-	-	20		1	
	00	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
Y	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	7	-	-	1	-	-	-	-	-	8	-	-	-	160		8	
	00	3	-	-	-	-	-	-	-	-	3	-	-	-	60		3	
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	95	15	-	-	-	-	-	-	-	-	15	-	-	-	300	20	43	
	00	14	-	-	8	-	-	1	-	-	23	-	-	-	460	12	28	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%			+12%							
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)														'82	0	Dec:	-	
														'88	0		-	
														'95	460		-	
														'00	520		-	
Tetradymia canescens																		
M	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0	13	22	
	00	1	-	-	-	-	-	-	-	-	1	-	-	-	20	17	24	
D	82	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	88	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	95	-	-	-	-	-	-	-	-	-	-	-	-	-	0		0	
	00	-	-	-	1	-	-	-	-	-	1	-	-	-	20		1	
% Plants Showing		<u>Moderate Use</u>			<u>Heavy Use</u>			<u>Poor Vigor</u>			<u>%Change</u>							
'82		00%			00%			00%										
'88		00%			00%			00%										
'95		00%			00%			00%										
'00		00%			00%			00%										
Total Plants/Acre (excluding Dead & Seedlings)														'82	0	Dec:	0%	
														'88	0		0%	
														'95	0		0%	
														'00	40		50%	